

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A method, comprising:
processing a prefetch command ~~indicating~~ having at least one conditional statement, ~~wherein the conditional statement specifies~~ indicating a condition with respect to content of a received Input/Output (I/O) request and at least one block to prefetch from storage to cache in response to determining that the content of the received I/O request satisfies the condition of the conditional statement is satisfied;
receiving an I/O request directed to a target block in the storage;
determining whether the content of the received I/O request satisfies the condition specified in the conditional statement of one prefetch command; and
prefetching the at least one block to prefetch indicated in the conditional statement of one prefetch command into the cache in response to determining that the content of the I/O request satisfies the conditional statement of one prefetch command.
2. (Currently Amended) The method of claim 1, wherein the condition with respect to the content of the I/O request ~~indicates~~ specifies a block that when accessed causes the prefetching of the at least one block to prefetch ~~indicated~~ specified in the conditional statement, wherein processing the prefetch command comprises:
generating the prefetch command using predictive analysis techniques to determine blocks anticipated to be accessed if a specified block is accessed, wherein the conditional statements specifies to prefetch the at least one block anticipated to be accessed if the specified block is accessed.
3. (Currently Amended) The method of claim 1, wherein one conditional statement is satisfied if ~~[[an]]~~ the content of the Input/Output I/O request specifies that the I/O request is directed to a specified block in the conditional statement.

4. (Currently Amended) The method of claim 3, wherein processing the prefetch command comprises generating the prefetch command, further comprising:

transmitting the generated prefetch command to a storage controller; and

transmitting Input/Output (I/O) requests to the storage controller after transmitting the generated prefetch command, wherein the storage controller prefetches the at least one block to prefetch indicated in one prefetch command in response to determining that the content of the I/O request specifies that the I/O request is directed to the specified block in the conditional statement of one prefetch command.

5. (Original) The method of claim 3, wherein processing the prefetch command further comprises:

including a duration parameter in the prefetch command indicating a duration of the prefetch command.

6. (Canceled)

7. (Currently Amended) The method of claim [[6]] 1, wherein determining whether the content of the I/O request ~~target block~~ satisfies the conditional statement of one prefetch command comprises determining whether the ~~target block~~ content of the I/O request satisfies the conditional statement of one unexpired prefetch command.

8. (Original) The method of claim 1, wherein one conditional statement includes a plurality of branch conditions, wherein each branch condition indicates one block and is associated with at least one block to prefetch, further comprising:

prefetching all blocks to prefetch associated with the branch conditions in the conditional statement; and

removing blocks to prefetch from cache associated with branch conditions that are not satisfied in response to determining that the block indicated in one branch condition is accessed.

9. (Currently Amended) A system, comprising:
a cache;

storage; and

circuitry capable of performing operations, the operations comprising:

processing a prefetch command ~~indicating~~ having at least one conditional statement, wherein the conditional statement ~~specifies~~ indicating a condition with respect to content of a received Input/Output (I/O) request and at least one block to prefetch from the storage to the cache in response to determining that the content of the received I/O request satisfies the condition of the conditional statement is satisfied;

receiving an I/O request directed to a target block in the storage;

determining whether the content of the received I/O request satisfies the condition specified in the conditional statement of one prefetch command; and

prefetching the at least one block to prefetch indicated in the conditional statement of one prefetch command into the cache in response to determining that the content of the I/O request satisfies the conditional statement of one prefetch command.

10. (Currently Amended) The system of claim 9, wherein the conditional statement ~~indicates~~ specifies a block that when accessed causes the prefetching of the at least one block to prefetch ~~indicated~~ specified in the conditional statement, wherein processing the prefetch command comprises:

generating the prefetch command using predictive analysis techniques to determine blocks anticipated to be accessed if a specified block is accessed, wherein the conditional statements ~~specifies~~ to prefetch the at least one block anticipated to be accessed if the specified block is accessed.

11. (Currently Amended) The system of claim 9, wherein one conditional statement is satisfied if the content of the I/O an Input/Output request specifies that the I/O request is directed to a specified block in the conditional statement.

12. (Currently Amended) The system of claim 11, wherein processing the prefetch command comprises generating the prefetch command, wherein the operations further comprise:

transmitting the generated prefetch command to a storage controller; and

transmitting Input/Output (I/O) requests to the storage controller after transmitting the generated prefetch command, wherein the storage controller prefetches the at least one block to prefetch indicated in one prefetch command in response to determining that the I/O request specifies that the I/O request is directed to the specified block in the conditional statement of one prefetch command.

13. (Original) The system of claim 11, wherein processing the prefetch command further comprises:

including a duration parameter in the prefetch command indicating a duration of the prefetch command.

14. (Canceled)

15. (Currently Amended) The system of claim [[14]] 9, wherein determining whether the content of the I/O request ~~target block~~ satisfies the conditional statement of one prefetch command comprises determining whether the ~~target block~~ content of the I/O request satisfies the conditional statement of one unexpired prefetch command.

16. (Original) The system of claim 9, wherein one conditional statement includes a plurality of branch conditions, wherein each branch condition indicates one block and is associated with at least one block to prefetch, wherein the operations further comprise:

prefetching all blocks to prefetch associated with the branch conditions in the conditional statement; and

removing blocks to prefetch from cache associated with branch conditions that are not satisfied in response to determining that the block indicated in one branch condition is accessed.

17. (Currently Amended) An article of manufacture comprising a hardware device including hardware logic or a computer readable storage medium including computer executable ~~implementing~~ code enabled to cause operations to be performed, the operations comprising: processing a prefetch command ~~indicating~~ having at least one conditional statement, wherein the conditional statement specifies ~~indicating~~ a condition with respect to content of a

received Input/Output (I/O) request and at least one block to prefetch from storage to cache in response to determining that the content of the received I/O request satisfies the condition of the conditional statement is satisfied;

receiving an I/O request directed to a target block in the storage;
determining whether the content of the received I/O request satisfies the condition specified in the conditional statement of one prefetch command; and
prefetching the at least one block to prefetch indicated in the conditional statement of one prefetch command into the cache in response to determining that the content of the I/O request satisfies the conditional statement of one prefetch command.

18. (Currently Amended) The article of manufacture of claim 17, wherein the conditional statement ~~indicates~~ specifies a block that when accessed causes the prefetching of the at least one block to prefetch indicated in the conditional statement, wherein processing the prefetch command comprises:

generating the prefetch command using predictive analysis techniques to determine blocks anticipated to be accessed if a specified block is accessed, wherein the conditional statements specifies to prefetch the at least one block anticipated to be accessed if the specified block is accessed.

19. (Currently Amended) The article of manufacture of claim 17, wherein one conditional statement is satisfied if ~~if [[an]]~~ the content of the I/O Input/Output request specified that the I/O request is directed to a specified block in the conditional statement.

20. (Currently Amended) The article of manufacture of claim 19, wherein processing the prefetch command comprises generating the prefetch command, wherein the operations further comprise:

transmitting the generated prefetch command to a storage controller; and
transmitting Input/Output (I/O) requests to the storage controller after transmitting the generated prefetch command, wherein the storage controller prefetches the at least one block to prefetch indicated in one prefetch command in response to determining that the content of the

I/O request specifies that the I/O request is directed to the specified block in the conditional statement of one prefetch command.

21. (Original) The article of manufacture of claim 19, wherein processing the prefetch command further comprises:

including a duration parameter in the prefetch command indicating a duration of the prefetch command.

22. (Canceled)

23. (Currently Amended) The article of manufacture of claim [[22]] 17, wherein determining whether the ~~target-block~~ content of the I/O request satisfies the conditional statement of one prefetch command comprises determining whether the ~~target-block~~ content of the I/O request satisfies the conditional statement of one unexpired prefetch command.

24. (Original) The article of manufacture of claim 17, wherein one conditional statement includes a plurality of branch conditions, wherein each branch condition indicates one block and is associated with at least one block to prefetch, wherein the operations further comprise:

prefetching all blocks to prefetch associated with the branch conditions in the conditional statement; and

removing blocks to prefetch from cache associated with branch conditions that are not satisfied in response to determining that the block indicated in one branch condition is accessed.

25. (Canceled)

26. (New) The method of claim 1, wherein the condition with respect to the content of the I/O request specifies a block in the storage, wherein the content of the I/O request satisfies the condition in response to determining that the I/O request is directed to a target block comprising the block specified in the condition.

27. (New) The method of claim 26, wherein the condition with respect to the content of the I/O request further specifies one of read or write access, wherein the content of the I/O request satisfies the condition in response to determining that the I/O request comprises the read or write access specified in the condition directed to the target block comprising the block specified in the condition.

28. (New) The system of claim 9, wherein the condition with respect to the content of the I/O request specifies a block in the storage, wherein the content of the I/O request satisfies the condition in response to determining that the I/O request is directed to a target block comprising the block specified in the condition.

29. (New) The system of claim 9, wherein the condition with respect to the content of the I/O request further specifies one of read or write access, wherein the content of the I/O request satisfies the condition in response to determining that the I/O request comprises the read or write access specified in the condition directed to the target block comprising the block specified in the condition.

30. (New) The article of manufacture of claim 17, wherein the condition with respect to the content of the I/O request specifies a block in the storage, wherein the content of the I/O request satisfies the condition in response to determining that the I/O request is directed to a target block comprising the block specified in the condition.

31. (New) The article of manufacture of claim 17, wherein the condition with respect to the content of the I/O request further specifies one of read or write access, wherein the content of the I/O request satisfies the condition in response to determining that the I/O request comprises the read or write access specified in the condition directed to the target block comprising the block specified in the condition.